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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,717	02/25/2002	Lin-Feng Li	eVionyx-0015USAAON00	3959

26665 7590 02/25/2005

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EXAMINER	
CANTELMO, GREGG	
ART UNIT	**PAPER NUMBER**
1745	

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/083,717	LI ET AL.	
	Examiner	Art Unit	
	Gregg Cantelmo	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-20 and 23-28* is/are pending in the application.

4a) Of the above claim(s) *23-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-20 and 26-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 27, 2004 has been entered.

Response to Amendment

2. In response to the amendment received December 27, 2004:

a. Claims 1, 4-20 and 23-28 are pending with claims 23-25 withdrawn from consideration.

b. The prior art rejections stand.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4-8, 13-14, 20, 26 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 58-019866-A (JP '866).

JP '866 discloses an electrode comprising iron fibers coated with nickel and a cadmium metal active material. The conductive material includes the iron fibers and the cadmium metal active material (abstract as applied to claim 1).

The diameter of the fibers is 4-100 micrometers (abstract as applied to claims 4-7).

The fibers are inherently either rectangular, square, triangular, "other polygonal", circular, elliptical, and combinations of such (as applied to claim 8).

The electrode is used in a battery, the battery inherently comprises first and second electrodes with an electrolyte in ionic contact between the electrodes. The nickel-coated iron fibers incorporated into one of the electrodes (abstract as applied to claims 13 and 14).

Additional cadmium oxide active material is provided to the sintered nickel-coated iron body having cadmium metal therein. The cadmium and cadmium oxide are introduced in a solution and the solvent is heated thereby leaving granules of the active material on and in the iron body (abstract as applied to claim 20).

JP '866 discloses an electrode comprising iron fibers coated with nickel and a cadmium metal active material. The conductive material includes the iron fibers and the cadmium metal active material (abstract as applied to claims 26 and 27).

Response to Arguments

4. Applicant's arguments have been considered but are not persuasive.

Applicant argues that the fibers of JP '866 are a current collector and not an active material.

This argument is not persuasive in so far as the instant claims are structured.

The claims recite an electrode comprising fibers comprising active material selected from a Markush group. The scope of the claims include current collector fibers coated with active material. JP '866 discloses fibers coated with an active material thus the fibers comprise an electrically active conductive material outer layer.

The claims only require that the fibers are electrically active conductive which does not require electrochemical activity but only electrical activity.

Furthermore it would appear that the claims themselves clearly encompass such arrangements. See claim 15 for example which teaches that the fibers themselves are not the active material but rather the coating applied to these fibers constitutes the electrically conductive material. Therefore it appears that Applicant's arguments filed December 27, 2004 are not commensurate or in agreement with the disclosed and claimed invention.

Claim Rejections - 35 USC § 102/103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 16-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP '866.

Claims 16-18 are drawn to product-by-process claims. Claim 18 provides structure to the claim along with process limitations. For example claim 18 to forming a fiber mat.

The teachings of claim 1, with respect to JP '866, have been discussed above and are incorporated herein.

JP '866 further forms a fiber body, i.e. a mat (abstract as applied to claim 18). The end product of JP '866 being held to be the same as that of the instant claims, regardless of the method of forming the product.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

"The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292

(Fed. Cir. 1983). Ex parte Gray, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989). See MPEP section 2113.

Response to Arguments

6. Applicant's arguments have been considered but are not persuasive.

Applicant argues that the fibers of JP '866 are a current collector and not an active material.

This argument is not persuasive in so far as the instant claims are structured.

The claims recite an electrode comprising fibers comprising active material selected from a Markush group. The scope of the claims include current collector fibers coated with active material. JP '866 discloses fibers coated with an active material thus the fibers comprise an electrically active conductive material outer layer.

The claims only require that the fibers are electrically active conductive which does not require electrochemical activity but only electrical activity.

Furthermore it would appear that the claims themselves clearly encompass such arrangements. See claim 15 for example which teaches that the fibers themselves are not the active material but rather the coating applied to these fibers constitutes the electrically conductive material. Therefore it appears that Applicant's arguments filed December 27, 2004 are not commensurate or in agreement with the disclosed and claimed invention.

Claim Rejections - 35 USC § 102

7. Claims 1, 4-14 and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 856898-A2 (EP '892).

EP '892 discloses an electrode comprising a plurality of fibers and an electrically active conductive material (abstract and col. 5, line 27 through col. 6, line 13). The active conductive material is a combination of lithium with other elements (col. 5, ll. 27-43 as applied to claim 1).

The fiber diameter is 5-200 microns, which is equivalent to 0.005-0.2 mm (col. 6, ll. 1-12 as applied to claims 4-7). 200 microns being a specific value that falls within the ranges of claims 4-6 and 100 microns in the preferred diameter range being a specific value which falls within the ranges of claims 4-7.

The fibers are inherently either rectangular, square, triangular, "other polygonal", circular, elliptical, and combinations of such (as applied to claim 8).

The fibers have a length of 1-100 mm and particularly 7-30 mm (col. 6, ll. 1-12 as applied to claims 9-12). The particular range of 7-30 mm has a lower limit 7 which is a specific data point which falls in the range of each of claims 9-12.

Fig. 2 shows an electrochemical cell having first and second electrodes 8a and 8b with an electrolyte 9 in ionic contact between the electrodes. Both of the electrodes comprise fibers and active conductive material disposed on the fibers (as applied to claim 13).

The electrochemical cell is a battery cell (Title and Fig. 2 as applied to claim 14).

EP '892 discloses an electrode comprising a plurality of fibers and an electrically active conductive material (abstract and col. 5, line 27 through col. 6, line 13). The active conductive material is a combination of lithium with other elements (col. 5, ll. 27-43 as applied to claims 26 and 27).

Response to Arguments

8. Applicant's arguments have been considered but are not persuasive.

Applicant argues that the fibers of EP '898 are a current collector and not an active material.

This argument is not persuasive in so far as the instant claims are structured.

The claims recite an electrode comprising fibers comprising active material selected from a Markush group. The scope of the claims include current collector fibers coated with active material. EP '898 discloses fibers coated with an active material thus the fibers comprise an electrically active conductive material outer layer.

The claims only require that the fibers are electrically active conductive which does not require electrochemical activity but only electrical activity.

Furthermore it would appear that the claims themselves clearly encompass such arrangements. See claim 15 for example which teaches that the fibers themselves are not the active material but rather the coating applied to these fibers constitutes the electrically conductive material. Therefore it appears that Applicant's arguments filed December 27, 2004 are not commensurate or in agreement with the disclosed and claimed invention.

Claim Rejections - 35 USC § 102/103

9. Claims 16-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over EP '898.

Claims 16-18 are drawn to product-by-process claims. Claim 18 provides structure to the claim along with process limitations. For example claim 18 to forming a fiber mat.

The teachings of claim 1, with respect to EP '898, have been discussed above and are incorporated herein.

The end product of EP '898 being held to be the same as that of the instant claims, regardless of the method of forming the product.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

"The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292

(Fed. Cir. 1983). Ex parte Gray, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989). See MPEP section 2113.

Response to Arguments

10. Applicant's arguments have been considered but are not persuasive.

Applicant argues that the fibers of EP '898 are a current collector and not an active material.

This argument is not persuasive in so far as the instant claims are structured.

The claims recite an electrode comprising fibers comprising active material selected from a Markush group. The scope of the claims include current collector fibers coated with active material. EP '898 discloses fibers coated with an active material thus the fibers comprise an electrically active conductive material outer layer.

The claims only require that the fibers are electrically active conductive which does not require electrochemical activity but only electrical activity.

Furthermore it would appear that the claims themselves clearly encompass such arrangements. See claim 15 for example which teaches that the fibers themselves are not the active material but rather the coating applied to these fibers constitutes the electrically conductive material. Therefore it appears that Applicant's arguments filed December 27, 2004 are not commensurate or in agreement with the disclosed and claimed invention.

Claim Rejections - 35 USC § 102/103

11. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP '898 in view of U.S. patent No. 6,093,503 (Isoyama).

The teachings of claim 1, with respect to EP '898 have been discussed above and are incorporated herein.

The difference between claim 15 and EP '898 is that EP '898 does not disclose the fiber material to be synthetic, cellulose or graphite fibers.

EP '898 discloses using carbon fibers (col. 6, ll. 1-3).

Isoyama is drawn to lithium electrodes wherein an active material is formed on a graphite fiber (paragraph bridging columns 1 and 2).

The motivation for using a graphite fiber is that it provides a suitable electrochemically inert, electrically conductive active material support.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of EP '898 by using a graphite fiber support as taught by Isoyama since it would have provided a suitable electrochemically inert, electrically conductive active material support. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945) See also In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). MPEP § 2144.07.

Response to Arguments

12. Applicant's arguments have been considered but are not persuasive.

Applicant argues that the "active" conductive material is not electrochemically inert but rather forms a part of the active electrode material.

Claim 15 does not require that the fiber material be the electrochemically active material. Rather the electrically conductive coating applied to these fibers constitutes the electrochemically active portion of the fibers.

The rejection makes no assertion that the active material is electrochemically inert. The rejection establishes obviousness for using graphite fibers on which the electrochemically active coating is then applied. The fiber material chosen for its electrochemical inertness and electrically conductive property as a support for the active material coating applied to the fiber.

Claim Rejections - 35 USC § 102

13. Claims 1 and 8-11, 14, 15 and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent No. 3,819,413 (Nippe).

Nippe discloses an electrode comprising a plurality of fibers for carrying an electrically active conductive material (abstract). The active conductive material includes iron, or iron sulfide (col. 4, ll. 44-49 and prior art claim 3 as applied to claim 1).

The fibers are inherently either rectangular, square, triangular, "other polygonal", circular, elliptical, and combinations of such (as applied to claim 8).

The fibers have a length of 1 mm (col. 6, ll. 19-21 as applied to claims 9-11). 1 mm is held to be sufficiently within the range of about 2mm as recited in claims 10-11.

The electrochemical cell is a battery cell (Title and Fig. 2 as applied to claim 14).

The fibers can be graphite fibers (col. 3, ll. 33-44 as applied to claim 15).

Nippe discloses an electrode comprising a plurality of fibers for carrying an electrically active conductive material (abstract). The active conductive material

includes iron, or iron sulfide (col. 4, ll. 44-49 and prior art claim 3 as applied to claims 26 and 27).

Response to Arguments

14. Applicant's arguments have been considered but are not persuasive.

Applicant argues that the fibers of Nippe are a current collector and not an active material.

This argument is not persuasive in so far as the instant claims are structured.

The claims recite an electrode comprising fibers comprising active material selected from a Markush group. The scope of the claims include current collector fibers coated with active material. Nippe discloses fibers coated with an active material thus the fibers comprise an electrically active conductive material outer layer.

The claims only require that the fibers are electrically active conductive which does not require electrochemical activity but only electrical activity.

Furthermore it would appear that the claims themselves clearly encompass such arrangements. See claim 15 for example which teaches that the fibers themselves are not the active material but rather the coating applied to these fibers constitutes the electrically conductive material. Therefore it appears that Applicant's arguments filed December 27, 2004 are not commensurate or in agreement with the disclosed and claimed invention.

Claim Rejections - 35 USC § 102/103

15. Claims 16-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nippe.

The fibers are disposed on a substrate 51 (as applied to claim 19).

Claims 16-18 are drawn to product-by-process claims. Claim 18 provides structure to the claim along with process limitations. For example claim 18 to forming a fiber mat.

The teachings of claim 1, with respect to Nippe, have been discussed above and are incorporated herein.

The end product of Nippe being held to be the same as that of the instant claims, regardless of the method of forming the product.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

"The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. In re Fessmann, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292

(Fed. Cir. 1983). Ex parte Gray, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989). See MPEP section 2113.

Response to Arguments

16. Applicant's arguments have been considered but are not persuasive.

Applicant argues that the fibers of Nippe are a current collector and not an active material.

This argument is not persuasive in so far as the instant claims are structured.

The claims recite an electrode comprising fibers comprising active material selected from a Markush group. The scope of the claims include current collector fibers coated with active material. Nippe discloses fibers coated with an active material thus the fibers comprise an electrically active conductive material outer layer.

The claims only require that the fibers are electrically active conductive which does not require electrochemical activity but only electrical activity.

Furthermore it would appear that the claims themselves clearly encompass such arrangements. See claim 15 for example which teaches that the fibers themselves are not the active material but rather the coating applied to these fibers constitutes the electrically conductive material. Therefore it appears that Applicant's arguments filed December 27, 2004 are not commensurate or in agreement with the disclosed and claimed invention.

Claim Rejections - 35 USC § 102

In the previous amendment Applicant amended the claims to remove zinc. However new claims 26-28 generically and specifically include zinc materials once

more. For such reasons the previous rejections drawn to zinc fibers is reintroduced into this office action.

17. Claims 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 62-069463-A (JP '463).

JP '463 discloses an electrode comprising zinc fibers in the electrode (abstract as applied to claim 26).

The material is zinc (abstract as applied to claims 27).

18. Claims 26-28 are rejected under 35 U.S.C. 102(b) as being anticipated by 3,853,625 (Louzos).

Louzos discloses an electrode comprising zinc fibers (abstract as applied to claim 26).

The metal includes zinc (abstract as applied to claim 27).

The zinc can further be alloyed with mercury (col. 16, ll. 48-50 as applied to claim 28).

19. Claims 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by 3,672,998 (Darland).

Darland discloses an electrode comprising zinc fibers in the electrode (abstract as applied to claim 26).

The material is zinc (abstract as applied to claim 27).

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPAT No. 3,674,563 discloses using electrochemically active

zinc fibers in a metal air cell (abstract and col. 3, ll. 67 through col. 4, ll. 12). JP 2000-223111-A discloses employing needle-shaped active particles (abstract).

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday to Thursday from 9 a.m. to 6 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregg Cantelmo
Primary Examiner
Art Unit 1745

gc

February 19, 2005